

Research on CO₂ reduction and value-added utilization based on dual carbon targets

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To combat global climate change, countries around the world have all taken corresponding responsibilities, in which the Chinese government has recently set a clear goal to reach its carbon peak by 2030 and achieve carbon neutrality by 2060, endeavoring to realize net-zero carbon dioxide (CO₂) emissions step by step. Thus, controlling and reducing carbon emissions is a crucial issue and needs to be urgently solved.

In this work, a novel and simple method to construct graphite sheet especially graphene and carbon nanotube via molten salt electrolysis has been proposed. On the basis of inert anode, graphite sheet especially graphene and carbon nanotube can be obtained by altering the cathodic material (different exchanging current density), composition of the melt and operation temperature. The results show that stainless steel and nickel are more preferred for the growth of graphite sheet while carbon nanotubes can be obtained on the graphite, glassy carbon and tungsten.